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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/916,849A

DATE: 07/03/2002

TIME: 12:44:48

Input Set : A:\Stan-021.app

Output Set: N:\CRF3\07032002\I916849A.raw

3 <110> APPLICANT: Bostein, et al.  
 5 <120> TITLE OF INVENTION: Basal Markers in Breast Cancer and Related Reagents  
 6 Uses Thereof  
 8 <130> FILE REFERENCE: 2002850-0024  
 10 <140> CURRENT APPLICATION NUMBER: 09/916,849A  
 11 <141> CURRENT FILING DATE: 2001-07-26  
 13 <160> NUMBER OF SEQ ID NOS: 15  
 15 <170> SOFTWARE: PatentIn Ver. 2.1  
 17 <210> SEQ ID NO: 1  
 18 <211> LENGTH: 829  
 19 <212> TYPE: PRT  
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 31 20 25 30  
 33 Glu Ala Glu Val Thr Leu Glu Ala Gly Gly Ala Glu Gln Glu Pro Gly  
 34 35 40 45  
 36 Gln Ala Leu Gly Lys Val Phe Met Gly Cys Pro Gly Gln Glu Pro Ala  
 37 50 55 60  
 39 Leu Phe Ser Thr Asp Asn Asp Asp Phe Thr Val Arg Asn Gly Glu Thr  
 40 65 70 75 80  
 42 Val Gln Glu Arg Arg Ser Leu Lys Glu Arg Asn Pro Leu Lys Ile Phe  
 43 85 90 95  
 45 Pro Ser Lys Arg Ile Leu Arg Arg His Lys Arg Asp Trp Val Val Ala  
 46 100 105 110  
 48 Pro Ile Ser Val Pro Glu Asn Gly Lys Gly Pro Phe Pro Gln Arg Leu  
 49 115 120 125  
 51 Asn Gln Leu Lys Ser Asn Lys Asp Arg Asp Thr Lys Ile Phe Tyr Ser  
 52 130 135 140  
 54 Ile Thr Gly Pro Gly Ala Asp Ser Pro Pro Glu Gly Val Phe Ala Val  
 55 145 150 155 160  
 57 Glu Lys Glu Thr Gly Trp Leu Leu Leu Asn Lys Pro Leu Asp Arg Glu  
 58 165 170 175  
 60 Glu Ile Ala Lys Tyr Glu Leu Phe Gly His Ala Val Ser Glu Asn Gly  
 61 180 185 190  
 63 Ala Ser Val Glu Asp Pro Met Asn Ile Ser Ile Ile Val Thr Asp Gln  
 64 195 200 205  
 66 Asn Asp His Lys Pro Lys Phe Thr Gln Asp Thr Phe Arg Gly Ser Val

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67      210      215      220
69 Leu Glu Gly Val Leu Pro Gly Thr Ser Val Met Gln Val Thr Ala Thr
70 225      230      235      240
72 Asp Glu Asp Asp Ala Ile Tyr Thr Tyr Asn Gly Val Val Ala Tyr Ser
73      245      250      255
75 Ile His Ser Gln Glu Pro Lys Asp Pro His Asp Leu Met Phe Thr Ile
76      260      265      270
78 His Arg Ser Thr Gly Thr Ile Ser Val Ile Ser Ser Gly Leu Asp Arg
79      275      280      285
81 Glu Lys Val Pro Glu Tyr Thr Leu Thr Ile Gln Ala Thr Asp Met Asp
82      290      295      300
84 Gly Asp Gly Ser Thr Thr Thr Ala Val Ala Val Val Glu Ile Leu Asp
85 305      310      315      320
87 Ala Asn Asp Asn Ala Pro Met Phe Asp Pro Gln Lys Tyr Glu Ala His
88      325      330      335
90 Val Pro Glu Asn Ala Val Gly His Glu Val Gln Arg Leu Thr Val Thr
91      340      345      350
93 Asp Leu Asp Ala Pro Asn Ser Pro Ala Trp Arg Ala Thr Tyr Leu Ile
94      355      360      365
96 Met Gly Gly Asp Asp Gly Asp His Phe Thr Ile Thr Thr His Pro Glu
97      370      375      380
99 Ser Asn Gln Gly Ile Leu Thr Thr Arg Lys Gly Leu Asp Phe Glu Ala
100 385      390      395      400
102 Lys Asn Gln His Thr Leu Tyr Val Glu Val Thr Asn Glu Ala Pro Phe
103      405      410      415
105 Val Leu Lys Leu Pro Thr Ser Thr Ala Thr Ile Val Val His Val Glu
106      420      425      430
108 Asp Val Asn Glu Ala Pro Val Phe Val Pro Pro Ser Lys Val Val Glu
109      435      440      445
111 Val Gln Glu Gly Ile Pro Thr Gly Glu Pro Val Cys Val Tyr Thr Ala
112      450      455      460
114 Glu Asp Pro Asp Lys Glu Asn Gln Lys Ile Ser Tyr Arg Ile Leu Arg
115 465      470      475      480
117 Asp Pro Ala Gly Trp Leu Ala Met Asp Pro Asp Ser Gly Gln Val Thr
118      485      490      495
120 Ala Val Gly Thr Leu Asp Arg Glu Asp Glu Gln Phe Val Arg Asn Asn
121      500      505      510
123 Ile Tyr Glu Val Met Val Leu Ala Met Asp Asn Gly Ser Pro Pro Thr
124      515      520      525
126 Thr Gly Thr Gly Thr Leu Leu Thr Leu Ile Asp Val Asn Asp His
127      530      535      540
129 Gly Pro Val Pro Glu Pro Arg Gln Ile Thr Ile Cys Asn Gln Ser Pro
130 545      550      555      560
132 Val Arg His Val Leu Asn Ile Thr Asp Lys Asp Leu Ser Pro His Thr
133      565      570      575
135 Ser Pro Phe Gln Ala Gln Leu Thr Asp Asp Ser Asp Ile Tyr Trp Thr
136      580      585      590
138 Ala Glu Val Asn Glu Glu Gly Asp Thr Val Val Leu Ser Leu Lys Lys
139      595      600      605

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141 Phe Leu Lys Gln Asp Thr Tyr Asp Val His Leu Ser Leu Ser Asp His
142      610      615      620
144 Gly Asn Lys Glu Gln Leu Thr Val Ile Arg Ala Thr Val Cys Asp Cys
145 625      630      635      640
147 His Gly His Val Glu Thr Cys Pro Gly Pro Trp Lys Gly Gly Phe Ile
148      645      650      655
150 Leu Pro Val Leu Gly Ala Val Leu Ala Leu Leu Phe Leu Leu Leu Val
151      660      665      670
153 Leu Leu Leu Leu Val Arg Lys Lys Arg Lys Ile Lys Glu Pro Leu Leu
154      675      680      685
156 Leu Pro Glu Asp Asp Thr Arg Asp Asn Val Phe Tyr Tyr Gly Glu Glu
157      690      695      700
159 Gly Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg
160 705      710      715      720
162 Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala Pro
163      725      730      735
165 Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn Pro Asp
166      740      745      750
168 Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala Asn Thr Asp
169      755      760      765
171 Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe Asp Tyr Glu Gly
172      770      775      780
174 Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu Thr Ser Ser Ala Ser
175 785      790      795      800
177 Asp Gln Asp Gln Asp Tyr Asp Tyr Leu Asn Glu Trp Gly Ser Arg Phe
178      805      810      815
180 Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Glu Asp Asp
181      820      825
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185 <211> LENGTH: 582
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190 <223> OTHER INFORMATION: Description of Artificial Sequence:Matrix
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197 Thr Leu Gly Thr Ala Leu Ala Ser Leu Gly Ser Ala Gln Ser Ser Ser
198      20      25      30
200 Phe Ser Pro Glu Ala Trp Leu Gln Gln Tyr Gly Tyr Leu Pro Pro Gly
201      35      40      45
203 Asp Leu Arg Thr His Thr Gln Arg Ser Pro Gln Ser Leu Ser Ala Ala
204      50      55      60
206 Ile Ala Ala Met Gln Lys Phe Tyr Gly Leu Gln Val Thr Gly Lys Ala
207 65      70      75      80
209 Asp Ala Asp Thr Met Lys Ala Met Arg Arg Pro Arg Cys Gly Val Pro
210      85      90      95
212 Asp Lys Phe Gly Ala Glu Ile Lys Ala Asn Val Arg Arg Lys Arg Tyr

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 213 |     |     | 100 |     |     |     | 105 |     |     | 110 |     |     |     |
| 215 | Ala | Ile | Gln | Gly | Leu | Lys | Trp | Gln | His | Asn | Glu | Ile | Thr |
| 216 |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |
| 218 | Gln | Asn | Tyr | Thr | Pro | Lys | Val | Gly | Glu | Tyr | Ala | Thr | Tyr |
| 219 |     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |
| 221 | Arg | Lys | Ala | Phe | Arg | Val | Trp | Glu | Ser | Ala | Thr | Pro | Leu |
| 222 | 145 |     |     |     |     | 150 |     |     |     | 155 |     |     | 160 |
| 224 | Glu | Val | Pro | Tyr | Ala | Tyr | Ile | Arg | Glu | Gly | His | Glu | Lys |
| 225 |     |     |     |     | 165 |     |     |     | 170 |     |     |     | 175 |
| 227 | Ile | Met | Ile | Phe | Phe | Ala | Glu | Gly | Phe | His | Gly | Asp | Ser |
| 228 |     |     |     | 180 |     |     |     |     | 185 |     |     |     | 190 |
| 230 | Asp | Gly | Glu | Gly | Gly | Phe | Leu | Ala | His | Ala | Tyr | Phe | Pro |
| 231 |     |     | 195 |     |     |     |     | 200 |     |     |     | 205 |     |
| 233 | Ile | Gly | Gly | Asp | Thr | His | Phe | Asp | Ser | Ala | Glu | Pro | Trp |
| 234 |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |
| 236 | Asn | Glu | Asp | Leu | Asn | Gly | Asn | Asp | Ile | Phe | Leu | Val | Ala |
| 237 | 225 |     |     |     | 230 |     |     |     |     | 235 |     |     | 240 |
| 239 | Leu | Gly | His | Ala | Leu | Gly | Leu | Glu | His | Ser | Ser | Asp | Pro |
| 240 |     |     |     | 245 |     |     |     |     | 250 |     |     |     | 255 |
| 242 | Met | Ala | Pro | Phe | Tyr | Gln | Trp | Met | Asp | Thr | Glu | Asn | Phe |
| 243 |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |
| 245 | Asp | Asp | Asp | Arg | Arg | Gly | Ile | Gln | Gln | Leu | Tyr | Gly | Gly |
| 246 |     |     | 275 |     |     |     | 280 |     |     |     |     | 285 |     |
| 248 | Phe | Pro | Thr | Lys | Met | Pro | Pro | Gln | Pro | Arg | Thr | Thr | Ser |
| 249 |     | 290 |     |     |     | 295 |     |     |     |     |     | 300 |     |
| 251 | Val | Pro | Asp | Lys | Pro | Lys | Asn | Pro | Thr | Tyr | Gly | Pro | Asn |
| 252 | 305 |     |     |     |     | 310 |     |     |     | 315 |     |     | 320 |
| 254 | Gly | Asn | Phe | Asp | Thr | Val | Ala | Met | Leu | Arg | Gly | Glu | Met |
| 255 |     |     |     | 325 |     |     |     | 330 |     |     |     |     | 335 |
| 257 | Lys | Glu | Arg | Trp | Phe | Trp | Arg | Val | Arg | Asn | Asn | Gln | Val |
| 258 |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |
| 260 | Tyr | Pro | Met | Pro | Ile | Gly | Gln | Phe | Trp | Arg | Gly | Leu | Pro |
| 261 |     |     | 355 |     |     |     | 360 |     |     |     |     | 365 |     |
| 263 | Asn | Thr | Ala | Tyr | Glu | Arg | Lys | Asp | Gly | Lys | Phe | Val | Phe |
| 264 |     | 370 |     |     |     | 375 |     |     |     |     |     | 380 |     |
| 266 | Asp | Lys | His | Trp | Val | Phe | Asp | Glu | Ala | Ser | Leu | Glu | Pro |
| 267 | 385 |     |     |     | 390 |     |     |     | 395 |     |     |     | 400 |
| 269 | Lys | His | Ile | Lys | Glu | Leu | Gly | Arg | Gly | Leu | Pro | Thr | Asp |
| 270 |     |     |     | 405 |     |     |     | 410 |     |     |     |     | 415 |
| 272 | Ala | Ala | Leu | Phe | Trp | Met | Pro | Asn | Gly | Lys | Thr | Tyr | Phe |
| 273 |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |
| 275 | Asn | Lys | Tyr | Tyr | Arg | Phe | Asn | Glu | Glu | Leu | Arg | Ala | Val |
| 276 |     |     | 435 |     |     |     | 440 |     |     |     |     | 445 |     |
| 278 | Tyr | Pro | Lys | Asn | Ile | Lys | Val | Trp | Glu | Gly | Ile | Pro | Glu |
| 279 |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |
| 281 | Gly | Ser | Phe | Met | Gly | Ser | Asp | Glu | Val | Phe | Thr | Tyr | Phe |
| 282 | 465 |     |     |     | 470 |     |     |     |     | 475 |     |     | 480 |
| 284 | Asn | Lys | Tyr | Trp | Lys | Phe | Asn | Asn | Gln | Lys | Leu | Lys | Val |
| 285 |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |

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Input Set : A:\Stan-021.app

Output Set: N:\CRF3\07032002\I916849A.raw

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287 Tyr Pro Lys Ser Ala Leu Arg Asp Trp Met Gly Cys Pro Ser Gly Gly
288          500          505          510
290 Arg Pro Asp Glu Gly Thr Glu Glu Thr Glu Val Ile Ile Glu
291          515          520          525
293 Val Asp Glu Glu Gly Gly Glu Ala Val Ser Ala Ala Val Val Leu
294          530          535          540
296 Pro Val Leu Leu Leu Leu Leu Val Leu Ala Val Gly Leu Ala Val Phe
297 545          550          555          560
299 Phe Phe Arg Arg His Gly Thr Pro Arg Arg Leu Leu Tyr Cys Gln Arg
300          565          570          575
302 Ser Leu Leu Asp Lys Val
303          580
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307 <211> LENGTH: 2923
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319 Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Pro Leu Leu Gly Asp
320          20          25          30
322 Gln Val Gly Pro Cys Arg Ser Leu Gly Ser Arg Gly Arg Gly Ser Ser
323          35          40          45
325 Gly Ala Cys Ala Pro Met Gly Trp Leu Cys Pro Ser Ser Ala Ser Asn
326          50          55          60
328 Leu Trp Leu Tyr Thr Ser Arg Cys Arg Asp Ala Gly Thr Glu Leu Thr
329 65          70          75          80
331 Gly His Leu Val Pro His His Asp Gly Leu Arg Val Trp Cys Pro Glu
332          85          90          95
334 Ser Glu Ala His Ile Pro Leu Pro Pro Ala Pro Glu Gly Cys Pro Trp
335          100          105          110
337 Ser Cys Arg Leu Leu Gly Ile Gly Gly His Leu Ser Pro Gln Gly Lys
338          115          120          125
340 Leu Thr Leu Pro Glu Glu His Pro Cys Leu Lys Ala Pro Arg Leu Arg
341          130          135          140
343 Cys Gln Ser Cys Lys Leu Ala Gln Ala Pro Gly Leu Arg Ala Gly Glu
344 145          150          155          160
346 Arg Ser Pro Glu Glu Ser Leu Gly Gly Arg Arg Lys Arg Asn Val Asn
347          165          170          175
349 Thr Ala Pro Gln Phe Gln Pro Pro Ser Tyr Gln Ala Thr Val Pro Glu
350          180          185          190
352 Asn Gln Pro Ala Gly Thr Pro Val Ala Ser Leu Arg Ala Ile Asp Pro
353          195          200          205
355 Asp Glu Gly Glu Ala Gly Arg Leu Glu Tyr Thr Met Asp Ala Leu Phe
356          210          215          220
358 Asp Ser Arg Ser Asn Gln Phe Phe Ser Leu Asp Pro Val Thr Gly Ala

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**VERIFICATION SUMMARY**

PATENT APPLICATION: US/09/916,849A

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TIME: 12:44:50

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